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ABSTRACT

The purpose of this document is to present specific and realistic guides to assist local school officials in making better decisions about instructional units, which may range from a language laboratory, multi-media study carrel, or computer-assisted instruction to a series of primary readers or other books. The assumptions on which the report is based are that school officials now need to select instructional units rather than to design them, that the units are becoming increasingly complex, that the units usually require a substantial financial outlay, and that school officials need guidelines to reach educationally sound decisions. The detailed guidelines follow this sequence: 1) initial probing of the proposed unit to decide if it is really needed and what it will accomplish; 2) developing a plan of action, including who should be involved in the investigation and how it should be undertaken; 3) accomplishing the plan by identifying the objectives of the unit, its relevance, validity, cost and evaluation; 4) reaching a final decision, including who will make this decision and what it will be; and 5) revising and recycling, to deal with unexpected problems which may interfere with implementation of the decision. (MBM)

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SELECTING new aids to TEACHING

by

RICHARD I. MILLER

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FOREWORD

A SPECIALLY called meeting of ASCD's Commission on Instructional Theory convened in Washington, D.C., March 31 and April 1, 1967. During this meeting ten interested persons evolved "A Model for Curriculum Development Decision Making."[1] The model utilized a systems approach to indicate the major components which might be seen as affecting the choice between two or more curriculum packages or instructional units. However, the model did not explicate and extend all of the components.

At this meeting a special project was organized under the direction of Richard I. Miller to spell out in greater detail various components of the original model.

Phase I of this special project was an invitational seminar held in Washington, D.C., August 10-12, 1967. The following persons were invited to prepare and present manuscripts on the topics indicated: Donald E. Glines—"Implementation"; John S. Martin—"Decision Making"; James Macdonald—"Instructional Theory Criteria"; Richard I. Miller—"Mix"; and Louis J. Rubin—"Practical Criteria."

Phase II of the special project began with the preparation of the first draft of this paper,

[1] Ira J. Gordon. "A Model for Curriculum Development Decision Making." In: Ira J. Gordon, editor. *Criteria for Theories of Instruction*. Washington, D.C.: Association for Supervision and Curriculum Development, 1968. pp. 40-44.

based upon feedback from the seminar participants. Following this step, the materials were field tested and the final document was completed. That document is presented in these pages.

RICHARD V. BROWN
Associate Secretary
Association for Supervision and Curriculum Development
December 1970

INTRODUCTION

THIS study culminates over three years of work in the sensitive and important area of procedures for making better decisions about large purchases of educational units. The study was made possible by the financial assistance of the Fund for Media Research, General Learning Corporation, and Xerox Corporation.

Many individuals and school systems have been helpful in the conferences, criticism, and in the field testing of the materials. In particular I would like to thank four associate investigators: Donald E. Glines, director and principal, Laboratory School, Mankato State College, Minnesota; James Macdonald, professor of education, University of Wisconsin—Milwaukee; John S. Martin, former superintendent of schools, Jackson, Mississippi; and Louis J. Rubin, dean of continuing education, Nova University, Fort Lauderdale, Florida.

As the model has been studied, its value as a guide has become apparent. It is very likely that no one school system will find the model fully adequate, and this is as it should be. However, as a guide it can provide useful assistance.

The potential value of this report has been enhanced since its inception, due to the increasing money bind as well as the greater public scrutiny of school expenditures. It is hoped that the considerable thought and work that have gone into this document will be of value to those who must make the important and difficult decisions that relate to optimal

utilization of limited funds for the improvement of instruction.

RICHARD I. MILLER
Vice President for Academic Affairs and Dean of the College
Baldwin-Wallace College, Berea, Ohio
September 27, 1970

Selecting New Aids to Teaching

THE purpose of this document is to present specific and realistic guides that can assist local school officials in making better decisions about instructional units. Guidelines developed in this report should assist in making decisions about a wide variety of these units, such as: (a) School system "X" has made a decision to revise its elementary social studies program, and it has decided to purchase a sequenced set of books. How will the selection be made from among the various offerings? Or, (b) School system "Y" has decided to investigate a computer-assisted instructional system for possible purchase or rental. What factors should be considered in reaching a decision?

The rise of instructional units is self-evident, and their increase can be expected to continue—at an accelerated rate. "Instructional units" may include a number of related items, usually purchased as an entity. These may range in complexity from such items as a language laboratory, multi-media study carrel, or computer-assisted instruction, to a series of primary readers or a series of mathematics books. A single textbook normally would not constitute such a unit.

This report is based upon four assumptions:

- Increasingly, the local decision makers are faced with the task of selecting and curricularizing instructional units rather than beginning from scratch and designing them.
- The units are becoming increasingly

complex and sophisticated, requiring more study and more assistance in their appraisal.

- The instructional units usually require a substantial financial outlay and usually will need to be used over a period of several years; therefore, careful consideration of these decisions becomes more essential than ever. Also, a growing tendency for local communities to reject increased taxation is turning school officials toward better utilization and accountability procedures.

- Local school officials need specific guidelines to assist them in reaching educationally sound decisions about such units.

The procedure suggested here assumes that an initial decision has been made to investigate one or more instructional units. These guides do not hold for conducting a general survey of what needs to be done—commonly called a "needs assessment."

The checklist in this report is presented in a sequential manner. In some circumstances, however, those in charge of the unit appraisal may want to "plug in" at various points rather than follow the overall sequence. For example, state regulations or school board decisions may mandate that certain kinds of action be taken; or in some situations there is current emphasis, interest, or popularity and/or money available to institute a particular innovation;[1] or a school system may be instituting innovations as part of a long-range plan. In these cases, one or several sections in this report would be superfluous.

Specific guidelines are developed for these general areas:

1.0 Initial probing of proposed unit

[1] "Innovation" is defined as a new or different unit that is under consideration. If accepted, a systematic introduction into the classroom, school, or school system is planned.

2.0 Developing a plan of action
3.0 Accomplishing the plan
4.0 Decision
5.0 Revision and recycling

The remainder of the report focuses on these areas in numerical order.

1.0 Initial Probing of Proposed Unit

Before moving into a detailed plan for assessing the instructional unit, initial consideration should be given to whether the subsequent effort is likely to result in success, asking:

1.1 Is the unit really needed?

1.2 What are its anticipated accomplishments?

1.2.1 More effective learning
1.2.1.1 What specifically?
1.2.2 Greater economy or more efficiency
1.2.3 Better teaching
1.2.4 Stronger community support
1.2.5 Greater receptivity to change
1.2.6 Better morale
1.2.7 Other

1.3 Does the unit represent the best alternative available to achieve stated objectives? (For instance, will $40,000 for purchase or $1,000 per month for lease of a "talking typewriter" result in better reading than putting the same amount into teacher aides or other procedures?)

1.4 At this point, what major obstacles and problems can be anticipated?

1.4.1 Are they surmountable?

1.5 Preliminary decision

1.5.1 Completely abandon further probing

1.5.2 Shelve further probing; reopen when timing is more appropriate

1.5.3 Continue, on a limited basis

1.5.4 Continue, full scale

1.5.5 Seek more evidence before decision is made

2.0 Developing a Plan of Action

The first step is to develop a plan of action, assuming that a decision has been made to undertake a more extensive investigation. Since the unit to be analyzed may represent a sizable investment of school money, a fairly well-defined plan is highly desirable in order that the study be as effective and as efficient as possible. The plan can be a sophisticated system such as a PERT model,[2] or it can be a small number of steps with some minimum structure. Those developing the plan of action

[2] Essentially, the fundamental concept underlying PERT (Program Evaluation and Review Technique) is that an ordered sequence of events to be achieved must be created. PERT may be said to consist of four principles: (a) It is an orderly and consistent plan at all levels, using the same form and basic philosophy. (b) It is a compulsory plan. It forces everyone to plan on something other than the back of an old envelope. (c) It is an integrated method of showing, in visual form, a plan which depicts all interrelationships and interdependencies of planned efforts in all areas and at all levels of personnel. (d) It is adaptable, providing for use of graphic or visual method of assimilating huge amounts of detail and presenting it in a form useful for decision making. (Edwin D. Smith. "The Use of PERT in Education." In: Don Morrison, editor. *Proceedings of the Ninth College and University Machine Records Conference*. New York: Educational Systems Corporation, 1964. p. 153.)

need not become enamored of complicated classification systems if the problem and circumstance do not warrant it.

The plan should ask these questions:

2.1 *What,* specifically, is the purpose of the investigation of the proposed unit?

2.2 *Who* should be involved?

2.3 *When* should the investigation take place?

2.4 *How* should it be undertaken?

Some elaboration on each of these four points follows:

2.1 What, *specifically, is the purpose of the investigation of the proposed unit?*

For example, is it to compare a new set of basic readers with what the school already has; is it comparative in terms of alternative instructional approaches; is it to determine the effectiveness of a language laboratory in a specified situation?

2.2 Who *should be involved?*

Eight groups should be considered. Not all eight need to be involved, but the consideration of these groups will serve to reduce the possibility of leaving out significant ones.

2.2.1 Classroom teachers

2.2.2 Curriculum workers

2.2.3 Professors who are subject matter specialists

2.2.4 Professors who are pedagogical specialists

2.2.5 School administrators

2.2.6 Citizens

2.2.7 Students

2.2.8 Consultants

Involvement should include several individuals who will be representatives of the

target audience for the unit. For example, if the unit under consideration is the multi-media, individualized study carrel, secondary school teachers should be involved.

2.3 When *should the investigation take place?*

Timing both in terms of "when" and "how long" should be a consideration, with a number of questions being raised, such as: When is the optimum time to begin? to end? How long should the investigation take? How will it affect workloads of participants?

2.4 How *should it be undertaken?*

2.4.1 Is the use of committees or task forces considered in conjunction with the innovation?

2.4.1.1 Can assignments be made to those with greatest competence?

2.4.1.2 Can assignments be given realistic timetables and tasks?

2.4.2 Are visitations to other school systems or demonstration sites scheduled?

2.4.2.1 Will these visitations be carefully planned (objectives of visit, targets, evaluation, follow-up)?

2.4.3 How will consultants or other specialized personnel be employed?

2.4.4 Specifically, *who* is to do *what*, *when*?

3.0 Accomplishing the Plan

The plan of action is ready for implementation. As mentioned earlier, the degree of complexity of the plan may vary considerably, from a PERT-like model to a small number of simple steps, but some prepared plan of action is a *must* for making effective and efficient decisions about instructional units.

The plan should focus upon the unit that is the center of attention, attempting to analyze it from a number of perspectives. These are:

3.1 Objectives of the unit: those of the producer as well as yours

3.2 Relevance and validity of unit's content

3.3 Compliance of unit with principles of human growth and development

3.4 Time and space (organizational) considerations

3.5 Personnel factors

3.6 Community factors

3.7 Cost analysis of the unit

3.8 Instructional and curricular factors

3.9 Evaluative procedures

3.10 Dissemination

3.11 Implementation

3.1 Objectives of the unit: those of the producer as well as yours

This step calls for identifying objectives of the unit. It is necessary in order to determine (a) whether the claimed objectives stand up under careful scrutiny, and (b) whether the claimed objectives are pertinent to the local situation.

3.1.1 What objectives do the producers give for their innovation? In other words, what do they say it will accomplish?

3.1.1.1 Do they have adequate research to support their claims?

3.1.1.2 Do these objectives seem reasonable and meaningful for *this* school/system?

3.1.2 What steps are taken by the producers to provide adequate knowledge about innovation for those who need it?

3.1.3 What objectives does your school system have for the unit? (What does your committee believe it should accomplish?)

3.1.4 What *compatibilities* do you discern between the producer's objectives and yours?

3.1.5 What *differences* do you find between the producer's objectives and yours?

3.1.6 How do *compatibilities* balance with *differences*?

3.1.7 Abort consideration. Is the probe worth continuing, based upon what is known at this point?

One cannot always assume that the school objectives are superior to those of the producer. In some cases, school officials would do well to spend the time that commercial producers of units have taken in working out objectives.

3.2 Relevance and validity of unit's content

Prompted by the "knowledge explosion," an unprecedented number of large-scale (or so it seems) curriculum studies have been undertaken, beginning with the Physical Sciences Study Committee (PSSC) in 1956. These studies have had three general characteristics: (a) They have utilized the team approach, combining academic scholars, college professors of education, classroom teachers, and others; (b) they have built their materials around the conceptual or broad theme approach, asking the same basic question that Herbert Spencer asked in 1848: "What knowledge is of most worth?" and (c) they have emphasized self-directed student learning or the discovery approach.

The following questions might be considered:

3.2.1 Is the content in step with modern facts and concepts in the area?

3.2.1.1 Does the organization of content follow some conceptual model that is consistent with the area?

3.2.1.2 Does the content allow sufficient opportunity for student discovery and independent study?

3.2.1.3 Is the learning level of content appropriate for the target audience?

3.2.1.4 Is the content historically accurate and relevant to its proposed setting?

3.2.1.5 Do the materials have student appeal?

3.2.1.5.1 How do you know?

3.2.1.5.2 Have students in your schools tried them?

3.2.1.5.2.1 Should a student *ad hoc* committee be established to examine the innovation?

3.2.1.5.2.2 Should a pilot study be designed?

3.2.1.6 What procedures have the producers employed for content validation?

3.2.1.6.1 Do these seem adequate?

3.2.2 Abort consideration. Is the probe worth continuing, based upon what is known at this point?

3.3 Compliance of unit with principles of human growth and development

A great number of traditional principles of human growth and development are obsolete, and many textbooks in educational psychology are outdated before they are published; yet we do know some things about human growth and development. Application of this section probably calls for consultative assistance, or someone who is knowledgeable and current about these matters.

3.3.1 What assumptions about learning are made by the unit?

3.3.2 What assumptions about motivation are made by the unit? For example, does the innovation provide intrinsic or extrinsic motivation for the student?

3.3.3 Is there any evidence of the unit's motivational impact on target audiences?

3.3.4 What assumptions are made about the learner?

3.3.4.1 Are these assumptions theoretically sound?

3.3.4.2 Have they been tested by research?

3.3.5 Is "hard" conclusive evidence available to indicate that learning will be improved over what is now achieved?

3.3.5.1 What are experiences of other school systems?

3.3.5.2 Have pilot studies been designed or could they be designed to secure local data to predict the consequences of adoption?

3.3.6 Which of the intellectual processes cited in Bloom's *Taxonomy of Educational Objectives Handbook I: Cognitive Domain* will most likely be developed by this innovation?

3.3.6.1 Knowledge

3.3.6.2 Comprehension

3.3.6.3 Application

3.3.6.4 Analysis

3.3.6.5 Synthesis

3.3.6.6 Evaluation

3.3.7 How might this material affect students with major *affective* or psychomotor difficulties?

3.3.8 Abort consideration. Is the probe worth continuing, based upon what is known at this point?

3.4 Time and space (organizational) considerations

"Organization" refers to the way that teachers and pupils are brought together so that learning can happen. The organizational matrix considers *time* and *space*.

"Time" refers to the duration and sequence of blocks of time devoted to the subjects taught and to the system for moving students upward.

"Space" divides students among teachers.

3.4.1 Is the innovation designed with any particular time and space requirements in mind?

3.4.2 Do *time* requirements of the innovation sufficiently mesh with those of the school system?

3.4.3 Is school equipment adequate for the requirements of the unit?

3.4.4 Are school facilities adequate?

3.4.5 Abort consideration. Is the probe worth continuing, based upon what is known at this point?

3.5 Personnel factors

It is false economy to purchase any new unit without careful consideration of personnel factors. For example, many innovations have floundered and failed through inadequate attention to the individuals who will be introducing and teaching them. More specifically, classroom teachers need to be involved right from the beginning if the unit is related to their work.

3.5.1 Does the school and/or school system have the professional skills necessary for the innovation?

3.5.1.1 If not, what provisions can be made for teacher retraining?

3.5.2 Should administrators have retraining also?

3.5.3 Can provisions for retraining, if needed, be made on a continuing basis?

3.5.4 To what extent should proficiency with this unit be a factor in hiring new personnel?

3.5.5 Can present professional personnel be sufficiently convinced of expected gains so that they will profit from retraining?

3.5.6 Will the unit require the use of consultants?

3.5.6.1 At what points?

3.5.6.2 Where can they be found?

3.5.6.3 What will their services cost?

3.5.7 What are the dominant characteristics of the student body, and to what extent are these characteristics related to the unit under study?

3.5.7.1 Socioeconomic levels

3.5.7.2 Achievement levels

3.5.7.3 Motivational levels

3.5.7.4 Is the size of the student body compatible with innovation?

3.5.7.5 Are students to be used in the testing or verification procedures?

3.5.8 Abort consideration. Is the probe worth continuing, based upon what is known at this point?

3.6 Community factors

Schools exist in an economic, social, religious, and political milieu, and several aspects of these realities may need to be considered carefully in making decisions about instructional units.

3.6.1 Will the unit be relevant not only to the instructional goals that it will seek to achieve but also to the entire climate into which it would be introduced?

3.6.2 What political realities of the community need to be considered?

3.6.3 What are the economic considerations for the community?

3.6.4 Is the unit likely to be accepted by the community?

3.6.5 Is the unit likely to be accepted by the school board?

3.6.6 To what extent should community members be involved in the decision-making process?

3.6.6.1 Which members?

3.6.6.2 At what points?

3.6.7 How should the involvement be approached?

3.6.8 Abort consideration. Is the probe worth continuing, based upon what is known at this point?

3.7 Cost analysis of the unit

The introduction of almost any type of unit eventually faces a dollar-evaluation. In some cases, educators have purchased false economy with the lowest bidder competition. School officials need to wage a continuing educational campaign against the tendency of many citizens to place economy above all else. The highest priority is effective learning, achieved with optimum economy.

3.7.1 Can the school system and the community afford both the *initial* and *ongoing* expenses?

3.7.2 Is adequate technical assistance available in case of malfunction and/or for regular maintenance?

3.7.2.1 Can this expense be estimated? (What have other school systems found?)

3.7.2.2 How will maintenance expenses change the overall cost factor?

3.7.2.3 Can school personnel learn this maintenance function?

3.7.3 How does the preferred unit compare with the nearest competing unit in cost and in expected results?

3.7.3.1 Is the one that is initially most economical also the same in the long run?

3.7.4 Does the expenditure for this unit represent the wisest investment of funds in terms of classroom learning?

3.7.4.1 Would more effective classroom learning result from selecting another type of unit? (For example, would more effective learning result from teaching machines or from teacher aides?)

3.7.5 Should the cost of the unit replace some existing expenditure?

3.7.6 Is the unit economical in terms of length of effective use intended?

3.7.6.1 Is it economical in terms of cost per pupil for the length of time needed to accomplish goals set for the unit?

3.7.7 Will expected improvements in learning be sufficient to justify the time and expense that may be involved in retraining or hiring personnel?

3.7.8 Abort consideration. Is the probe worth continuing, based upon what is known at this point?

3.8 Instructional and curricular factors

A number of general instructional and curricular issues need to be considered, but they do not seem to fit into any of the other categories.

3.8.1 To what extent does the unit make a meaningful contribution toward greater individualization of instruction?

3.8.1.1 What is the basis of your judgment?

3.8.2 To what extent does the innovation utilize and/or build on existing instructional resources?

3.8.2.1 Can the innovation be linked to the existing program? Should it be?

3.8.3 Can the intended outcomes of the innovation be transferred from grade to grade and from subject to subject?

3.8.4 What, if any, limitations will the unit's installation impose upon the school organization? Or does it add new flexibility?

3.8.5 Can the material be adapted to individualized instruction, independent study, large-group presentation, small-group presentation, small-group discussion, and laboratory experiences?

3.8.5.1 To which ones most effectively?

3.8.6 Can it be used in interdisciplinary or multidisciplinary approaches as opposed to discipline teams or self-sufficient classrooms?

3.8.7 What evidence about the unit is available from school systems that have used it?

3.8.7.1 What other factors need to be taken into consideration in this assessment? (Some of these are size, specific needs of system, nature of students, type of school, and so forth.)

3.8.8 Abort consideration. Is the probe worth continuing, based upon what is known at this point?

3.9 Evaluative procedures

This section refers to evaluative procedures that can be developed for the unit to help determine whether—after installation—its objectives are being accomplished.

Too often "evaluative procedures" are not considered when the unit is being studied, presumably based upon the assumption that if the unit is selected and implemented, it will automatically "do good." *This easy way out constitutes one of the greatest weaknesses in U.S. education: namely, inadequate evaluation.* We need to make some judgments about the procedures for evaluating the unit during

the initial study of its potential effectiveness. If reasonably effective evaluation of the unit appears to be a major obstacle, then this future difficulty should weigh significantly in accepting or rejecting the unit.

Evaluation too often is considered only as a final judgment, such as a final grade in a college course. The modern concept of evaluation looks upon evaluation as countless judgments along the way in much the same way that huge rockets are given directional guidance by a computer from the first instants after blast-off. Evaluation, then, becomes a vital input into the decision-making process, providing feedback data that allow corrections to be made along the way. This concept of evaluation, however, requires more planning and coordination than the old "act-and-hope" approach. The following questions are designed to assist the committee in determining whether, and how, reasonably effective evaluation can become an integral part of the unit:

3.9.1 Do you have expertise in evaluation on your study team?

3.9.1.1 If not, how can it be secured?

3.9.2 What kinds of evaluation would seem most appropriate for the unit under consideration?

3.9.2.1 Experimental designs

3.9.2.1.1 Single measurement

3.9.2.1.2 Pre- and post-test

3.9.2.1.3 Control group

3.9.2.1.4 Pre- and post-test plus control group

3.9.2.1.5 Quasi-experimental design

3.9.2.1.6 Other

3.9.2.2 Judgments of consultants

3.9.2.3 Judgments of:

3.9.2.3.1 Teachers

3.9.2.3.2 Students

3.9.2.3.3 Parents

3.9.2.3.4 School officials

3.9.2.3.5 Citizens

3.9.2.3.6 Other

3.9.2.4 What techniques will be used for collecting data?

3.9.2.4.1 Standardized tests

3.9.2.4.2 *Ad hoc* tests

3.9.2.4.3 Questionnaires

3.9.2.4.4 Interviews

3.9.2.4.4.1 If used, is special training planned?

3.9.2.4.5 Ratings

3.9.2.4.6 Audio or visual records

3.9.2.4.7 Case studies

3.9.2.4.8 Checklists

3.9.2.4.9 Judgments

3.9.2.4.10 Classroom interaction devices for analyzing behavior

3.9.2.5 Abort consideration. Is the probe worth continuing, based upon what is known at this point?

As a footnote, one needs to approach the task of evaluation with open-minded humility. We should have no illusions about the primitive state of the art and science at this point. On the other hand, we do know much more about evaluation than we knew five years ago, and we are improving all the time.

3.10 Dissemination

Dissemination is defined as a systematic process for passing along information about the unit, with the expectation that the target audience will be interested or can be persuaded to participate in the unit. In essence, a study of dissemination should consider:

Who should be the target audience, *how* should they be involved, and *what* do they need to know (skirting between too little and too much information)?

3.10.1 If the unit is adopted, *who* should use it?

Presumably the decision to accept, reject, etc., the unit will be made by a small, select group. This decision should include steps in spreading the dissemination to the next circle of educators. For instance, is the unit going to be on a trial or experimental basis for a few schools? If so, which ones? Such decisions need to be considered in the decision-making process and not after it.

3.10.2 *How* should the target clientele be involved?

In other words, in what ways will the target clientele be involved, and to what extent?

3.10.2.1 Workshops

3.10.2.2 Lectures

3.10.2.3 Memoranda

3.10.2.4 Faculty meetings

3.10.2.5 Self-study

3.10.2.6 Demonstrations

3.10.2.7 Other

3.10.3 *What* does the target audience need to know?

Some innovations have failed because teachers were required to know too much, or at least to have knowledge different from their basic professional preparation.

3.10.4 Abort consideration. Is the probe worth continuing, based upon what is known at this point?

3.11 Implementation

Some attention should be given in the decision-making process to how the unit will be

implemented—placed in an operational context, either in a regular or in an experimental program. At this point, future difficulties should be considered. Some instructional units will be unacceptable simply because the situation is not ripe, or the students or teachers are not ready.

3.11.1 What factors should be considered as one thinks ahead to implementation?

3.11.1.1 Can the unit be successfully implemented in the environment for which it is intended?

3.11.2 Has the timing of implementation been considered?

Timing is important not only in terms of dates when budgets are due and expenditures must be made, but also in terms of the degree of readiness of staff and other personnel to use the new unit. It would be rather foolish, for example, to propose videotape material in the school when the faculty was upset over some particular experience with educational television.

3.11.3 What other problems and/or obstacles should be considered?

3.11.3.1 How serious are they?

3.11.3.2 What procedures can be developed to overcome them?

3.11.4 How is implementation to be facilitated?

3.11.4.1 Workshops

3.11.4.2 Special lectures

3.11.4.3 Memoranda

3.11.4.4 Demonstrations

3.11.4.5 Other

3.11.5 Can funds be made available for implementation?

3.11.6 Abort consideration. Is the probe worth continuing, based upon what is known at this point?

4.0 Decision

If no "abort" decision is reached by this time, a final decision is now in order. This process may be simple or complex, depending upon the variety of circumstances that will be unique to any particular problem.

4.1 Who *will make the decision?*

Decisions may be categorized into either *policy* or *operational,* with different parties involved in each dimension. In most cases, the decision is operational, such as the purchase of the AAAS *Science—A Process Approach*. In some cases, however, where large sums of money are involved and a large, new program is being considered, a policy decision will be needed.

- 4.1.1 Policy decision
  - 4.1.1.1 School board
  - 4.1.1.2 Superintendent
  - 4.1.1.3 Curriculum director/supervisor
  - 4.1.1.4 Principal
  - 4.1.1.5 Teacher
  - 4.1.1.6 Student
- 4.1.2 Operational decision
  - 4.1.2.1 Superintendent
  - 4.1.2.2 Curriculum director/supervisor
  - 4.1.2.3 Principal
  - 4.1.2.4 Teacher
  - 4.1.2.5 Student

4.2 How long *should be allowed for the final decision?*

4.3 What *decision will be made?*

- 4.3.1 Full purchase/rental
- 4.3.2 Provisional trial
- 4.3.3 Very limited purchase/rental

4.3.4 Postponement of decision until more evidence is obtained

4.3.5 Postponement of decision until climate is better

4.3.6 No purchase/rental

5.0 Revision and Recycling

Unexpected problems may interfere with implementation after a positive decision has been made on the unit under consideration. Factors such as lack of staff availability, unexpected costs, and unanticipated obstacles may force adjustments at the time of implementation or, indeed, in rare cases a reconsideration of the decision itself.

Most innovations are introduced with an unspoken sense of finality. Rarely are provisions made for revision and subsequent recycling. All educational innovations should be subjected to periodic reviews. This final section asks several questions on this matter.

5.1 What plans are made for a systematic evaluation of the ongoing innovation?

5.2 What provisions are made for basing revisions upon these evaluations?

5.3 Who is to do the ongoing evaluation?

5.4 Are sufficient funds available for it?

To some, the process for decision making outlined here may seem unnecessarily long and complex, and in some instances a simplified version would be preferable. Yet, *in most instances,* the process of making decisions about instructional units suffers because of oversimplified and inadequate procedures. We simply need to do better than we are doing in this matter. Hopefully, the procedure outlined here can be of use in this respect.